

TRU TeamWorks

A weekly e-newsletter for the Waste Isolation Pilot Plant team

August 14, 2003

The Big Story

LANL RH Demo a Big Success



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WIPP Shipments

16	Shipments scheduled to arrive at WIPP this week
1,929	Total shipments received at WIPP

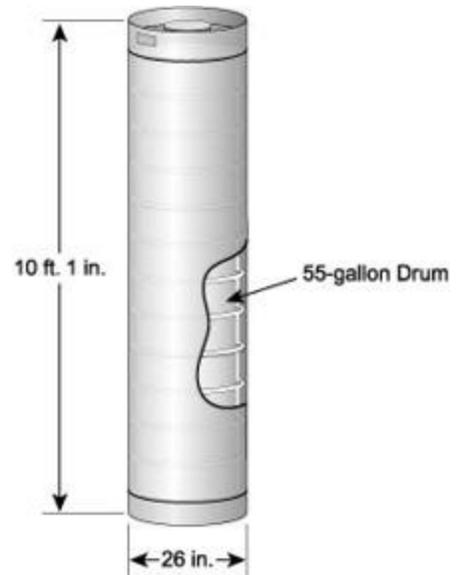
Last week, observers at Los Alamos got a first look at how RH-TRU waste will be characterized for future WIPP disposal. The lab hosted the successful two-day demonstration - an important step toward shipping RH-TRU waste to WIPP.

Representatives from EPA, EEG and CBFO were on hand to observe the demo. NMED did not attend the event, having viewed dry-run activities weeks earlier. According to Wayne Ledford, CTAC acting QA manager, the demonstration was a success. "The process was demonstrated very clearly. All of the observers were favorably impressed with LANL's ability to adhere to the requirements pertaining to this program."

The demo, based on the proposed *RH-TRU Waste Characterization Program Implementation Plan (PIP)*, was a walk-through of the process LANL will use to characterize RH-TRU waste. The PIP document details the exact procedures for the EPA. Following the demonstration, EPA provided further comments to WIPP concerning the RH process. WIPP will respond to those comments and a revised PIP document will be resubmitted to EPA.

NMED must also review and approve the RH-TRU characterization process. The state agency is currently reviewing a permit modification request that addresses the process.

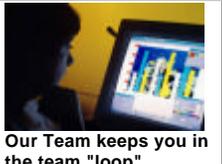
LANL efforts to characterize RH waste are currently focused on obtaining approval to ship 16 canisters of waste that were initially characterized in the late 1980s and early 90s. The canisters were characterized to an earlier version of the WIPP Waste Acceptance Criteria and must be recertified to meet current waste acceptance requirements.



This RH canister is similar to the canisters that are packed and in storage at LANL.

CBFO is considering demonstrations of RH characterization and packaging at other generator sites to illustrate program capabilities.

In the News

 <p>Vital Safety Systems: Their importance can't be overstated</p>	 <p>Rev. 19C approval paves the way for Hanford waste</p>	 <p>Mobile loading units make the rounds at generator sites</p>	 <p>Truly epic work takes place in WIPP underground</p>	 <p>Teams must focus efforts to get results</p>	 <p>Our Team keeps you in the team "loop"</p>
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MLU Team Makes "House Calls"



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Mobile Loading Unit Team Members
Wade Weyerman LANL/CB Team Leader
Jim Bailey, LANL/CB
Lane Galle, WTS
Alfred Hinojos, WTS
Kevin McTaggart, LANL/CB
Mike Sensibaugh, LANL/CB
Craig Suggs, WTS

It's a big job cleaning up our nation's TRU waste. But joint efforts by Los Alamos National Laboratory-Carlsbad Operations (LANL/CB) and Washington TRU Solutions have simplified the task. The two organizations worked together to assemble a nationally certified team that travels with three Mobile Loading Units (MLU) to make "house calls" to DOE facilities where TRU waste is temporarily stored.

Once waste has been characterized, highly skilled team members use standardized procedures and portable MLU equipment to safely and cost-effectively certify, load and ship as many as five shipments of TRU waste to WIPP per week. The team is particularly cost effective at small quantity sites, so called because they have small TRU waste inventories and little or no infrastructure to certify and load waste for shipment.

Under DOE direction, the team is led by Los Alamos National Laboratory's Carlsbad Operations Office. To maximize effectiveness, team members are cross-trained to perform transportation certification, TRUPACT-II operations and helium leak detection. The MLU itself is transported by a single tractor-trailer. When deployed with a three-member team, the unit can be unloaded and operational within hours.

Mobile loading operations debuted in April 2002, with a first shipment of TRU waste to WIPP from the Savannah River Site in South Carolina.



The MLU team loading a 14-pack assembly at ANL-E

The MLU team has since completed 169 successful shipments from seven generator sites.

At this time the MLU operations team is supporting shipments from Argonne National Laboratory-East near Chicago, Los Alamos National Laboratory in New Mexico, and provides loading and unloading services for Argonne National Laboratory-West in Idaho Falls, ID.

"The team and mobile units will play an ever increasing role in DOE's plans to accelerate the cleanup of TRU waste," comments Bryan Howard, LANL/CB CCP Support Manager. "Small-quantity and major sites around the country will benefit from this program."

– By Mike Sensibaugh, LANL/CB



Transportation News

Revision 19c, One Step Forward



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WIPP Shipments

16	Shipments scheduled to arrive at WIPP this week
1,921	Total shipments received at WIPP

To understand the 19c story, let's start in the WIPP underground. More than 47,000 containers of waste have now been safely disposed of underground at WIPP. Inside those 55-gallon drum or standard waste box containers are rags, tools, cloth booties and other plutonium contaminated trash that was bagged and tied, much like you would bag your trash at home.

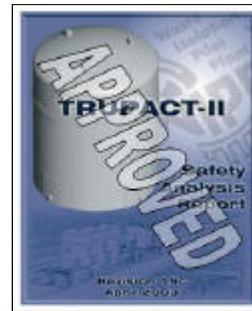
The difference, of course, is that TRU waste isn't kitchen waste but the byproduct of nuclear weapons production. Thus, the containers and even the layers of bagging inside the container must meet stringent standards before shipment to WIPP. Those standards, down to the inner packaging configurations, were spelled out in the TRUPACT-II Authorized Methods of Payload Control (TRAMPAC) and the TRUPACT-II Safety Analysis Report (SAR).

Some wastes in the DOE complex, however, were packaged years before issuance of the TRAMPAC and SAR. One example is the thousands of unvented, heat-sealed bags of TRU waste at the Hanford Site. The concern with heat-sealed bags is the potential for buildup of hydrogen gas during transport (containers are vented before and after shipment).

To ensure the safety of TRUPACT-II shipments, the potential hydrogen gas release from each drum is quantified. Prior to Revision 19c, TRAMPAC-approved bagging methods included twist-and-tape closure and heat-sealed closure with a vent.

Gas release rates were established based on the number of layers of confinement (bags inside of bags) and the closure methods used.

Under the previously approved TRAMPAC, heat-sealed bags greater than 4 liters could not be transported to WIPP without being vented. To meet TRAMPAC requirements, thousands of already-packaged containers would have to be opened, the heat-sealed bags vented and then repackaged at great cost to taxpayers and of potential risk to workers.



To clear the path for safe disposal of this waste, WIPP submitted an application to the Nuclear Regulatory Commission for review, seeking to revise the TRAMPAC.

Along with the submittal was a new analysis of gas release rates based on permeation of hydrogen through the plastic bag wall. In essence, heat sealed bags greater than 4 liters are shippable if surface area requirements are met. The NRC, which regulates shipping configurations, approved Revision 19c in July.

The significance of 19c is that shipments of TRU waste will continue to be safe and comply with regulations. And, according to WTS Transportation Manager Kim Jackson, "19c brings thousands of waste containers one step closer to disposal."



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Total Waste Disposed Underground at WIPP
 (as of 8/14/03)

43,223	CH drums
1,914	CH standard waste boxes
319	CH ten-drum overpacks
14,111	Cubic meters

First Panel, Last Steps

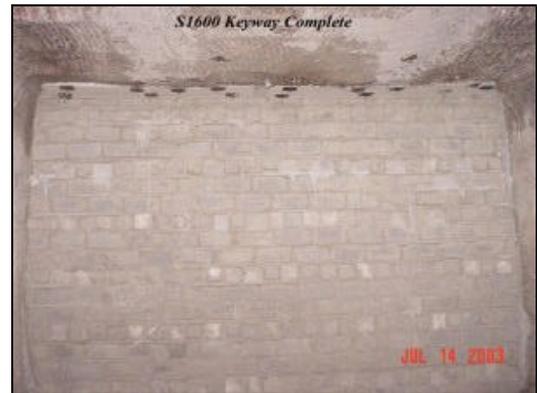
On July 10, underground construction crews mortared the last of 12,578 concrete blocks to close off Panel 1 from active work areas. The 12-foot-thick block walls are built of non-combustible, solid concrete blocks (that weigh 75 pounds each) mortared tightly together and against the roof, floor and side walls.

Pending approval of a revised closure design by the EPA and NMED, DOE plans to extend the wall to 30 feet in length, backed up by 100 feet of run of mine salt.

Panel 1, the first of eight panels to be mined out at WIPP, was closed for disposal in March, four years after the first shipment of TRU waste was received from Los Alamos National Laboratory. Approximately 10,500 cubic meters of TRU waste were disposed in Panel 1's seven football field-length disposal rooms and connecting passageways.

A decade earlier, WIPP scientists and engineers recognized the need to close off waste-filled panels to ensure worker and environmental safety once ventilation and power were removed and daily maintenance ceased in the panel. Part of the proposed closure system included explosion isolation walls at panel entrances, capable of withstanding air blasts, fire, methane gas buildup and explosion, and ground movement.

Studies have shown that the chances of such an explosion in the WIPP underground are remote to the point of total implausibility, but the walls are one more example of WIPP's defense-in-depth safety approach.



This twelve-foot-thick wall isolates Panel 1 from the remainder of the WIPP repository.

In epic simultaneous operations, underground crews began mining out Panel 3 for future disposal, as Room 7 of Panel 2 was filled to capacity, and Panel 1's initial closure wall neared completion.

Tasked with cradle-to-grave management of TRU waste, many WIPP employees, like CBFO Chief Scientist Roger Nelson, view panel closure as the end of the TRU waste cycle. Over time, the disposal rooms (mined out of an ancient salt formation) will close in and encapsulate the waste. "That salt has been there for 250 million years; it will be there another 250," said Nelson.

EM To Review WIPP Vital Safety Systems



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Auditors from the Office of Environmental Management (EM-2) will visit WIPP later this month to assess the systems that are considered most vital to WIPP safety.

The systems (see quiz at bottom right) cross functional boundaries and are key to maintaining a safe operating envelope at WIPP.

To ensure the reliability of safety-related systems, the Defense Nuclear Facility Safety Board (DNFSB) issued Recommendation 2000-2, that requires DOE nuclear facilities to identify their vital safety systems. DNFSB then evaluates the condition of those systems and the protocols designed to keep them in top-notch working order.

Reliability of WIPP's vital safety systems is so important that a cognizant engineer is assigned to each system.

System engineers perform annual walk-downs to verify that proper configuration management, maintenance, surveillance and testing are carried out. At two-year intervals, each system also undergoes a thorough management assessment.

"Cognizant engineers feel confident about the upcoming vital safety system audit," said Bertha Cassingham, lead auditor, Quality Assurance. WIPP's vital safety systems program was benchmarked by other DOE facilities following the release of Recommendation 2000-2.



Based on system failure scenarios identified in the Contact-Handled Waste Safety Analysis Report, WIPP's vital safety systems include a defense-in-depth function, or default system, to prevent or minimize consequences if any of the vital systems should fail.

<p>Question: Which of the following is <u>not</u> a Vital Safety System at WIPP?</p> <ol style="list-style-type: none"> 1. CH Confinement Ventilation System (HV01) 2. Underground Ventilation & Filtration System (VU01) 3. Surface Lightning Suppression System (JH03) 4. Waste Handling Building Fire Suppression & Detection System (FP02, FP03) 5. Continuous Air Monitors (CAMs), Room Exit CAMs supporting shift to filtration (RM01) 6. Waste Hoist Structures Systems and Components that prevent uncontrolled movement (UH06) 7. Central Monitoring System supporting shift to filtration (CM01) 8. Waste Handling Building Structure and Tornado Doors (CH02) 9. Contact Handled TRU Waste Handling Equipment (WH02) <p>Answer: Surface Lightning Suppression System (JH03)</p>

Effective Project Teams Focus on "THE Big Thing"



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Reinhard Knerr makes a habit of stepping out of his comfort zone at the Department of Energy. The nuclear engineer's last leap landed him smack in the middle of a DOE Office of Environmental Management (EM) top-to-bottom examination.

The EM goal? THE big thing: Cleanup and disposal of radioactive waste.



This hardworking team is accomplishing their mission by focusing on the job at hand.

Why use the team approach? You focus the work "on the waste management mission and that is to dispose of waste across the DOE complex," said Knerr, project manager for the EM team for low-level, mixed low-level and transuranic waste. The Carlsbad Field Office engineer also has worked projects at DOE sites that include Pantex, Portsmouth, Mound and Y-12.

EM challenged 10 teams to cut a clear path to waste disposal complex-wide, reducing health and safety risks to the public, workers and environment. DOE Directive 413.3-1 details project management for DOE Order 413.3.

This team approach with a singular mindset promises major returns for WIPP and waste generator sites. The challenge? Stay on track, avoiding what Knerr calls "scope creep."

Let's do the math. EM must clean up 114 DOE sites that cover two million acres. Seventy-four small sites were completed as of 2002. That left 40 sites, including the three largest: Savannah River Site, Idaho National Engineering and Environmental Laboratory and Hanford.

Success follows when a team identifies mission needs, focuses on requirements, sets sequential steps, practices open communication, considers DOE corporate benefit, works cost-effectively, and executes the solution. The process "makes sure you don't come up with a solution for a problem that we don't have," said Knerr. Sound project management starts by aligning work with mission and requirements.

Knerr presented recommendations last week to Jessie Roberson, Assistant Secretary for EM, with confidence they are "good for the complex." Why did the project management team approach work? Participants were geographically and professionally diverse. Members took ownership, communicated candidly, and participated with commitment. Project teams are a timely "Working Smart" solution for WIPP and the National TRU Program.

<p>Working Smart:</p> <ul style="list-style-type: none"> ■ Effective project teams focus on "THE big thing." ■ DOE Project Management Manual (DOE 413.3-1) is the model for large, complex work projects.
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- CBFO hosted a group of six high level congressional staffers last Thursday. WIPP was the final stop on a tour of key government facilities in this area. Other stops included White Sands Missile Range, Fort Bliss and Holloman AFB. Staffers representing the offices of Senators Pete Domenici and Jeff Bingaman, Representatives Heather Wilson and Steve Pearce toured WIPP surface and underground facilities.

CBFO Technical Assistance Contractor

- On July 14, **Portage** was awarded a contract by the Sacramento District, United States Army Corps of Engineers to remove and dispose of approximately 600 cubic yards of debris associated with the former DOE airport landfill in Los Alamos, New Mexico.

Los Alamos National Laboratory

- Scientists at Los Alamos National Laboratory have captured eight of R&D Magazine's 2003 R&D 100 Awards. The annual contest, sponsored by the Chicago-based trade magazine, *R&D Magazine*, uses technical experts to help determine the best applied new technologies.

Sandia National Laboratories

- Sandia National Laboratories researchers won seven R&D 100 Awards this year — the most the Lab has won since it garnered eight in 1997. The annual contest uses technical experts to help determine the best applied new technologies.

Washington TRU Solutions

- **Stephen Marchetti**, Executive Vice President of Operations for the Energy and Environment unit of Washington Group International, has been appointed Chairman and CEO of Washington TRU Solutions LLC (WTS). **Dr. Steven Warren**, who was appointed President of WTS in January, will continue to direct the day-to-day management and operation of WTS.

WIPP

- **WIPP at SECON 3 Status**
SECON is the DOE acronym for Security Conditions. Degrees of readiness are identified in response to terrorist or other threats. The SECON alert levels are as follows:

SECON 5 - Threat negligible
SECON 4 - Threat low
SECON 3 - Threat medium
SECON 2 - Threat high
SECON 1 - Threat critical